Long-term Variations in the Geospace Environment

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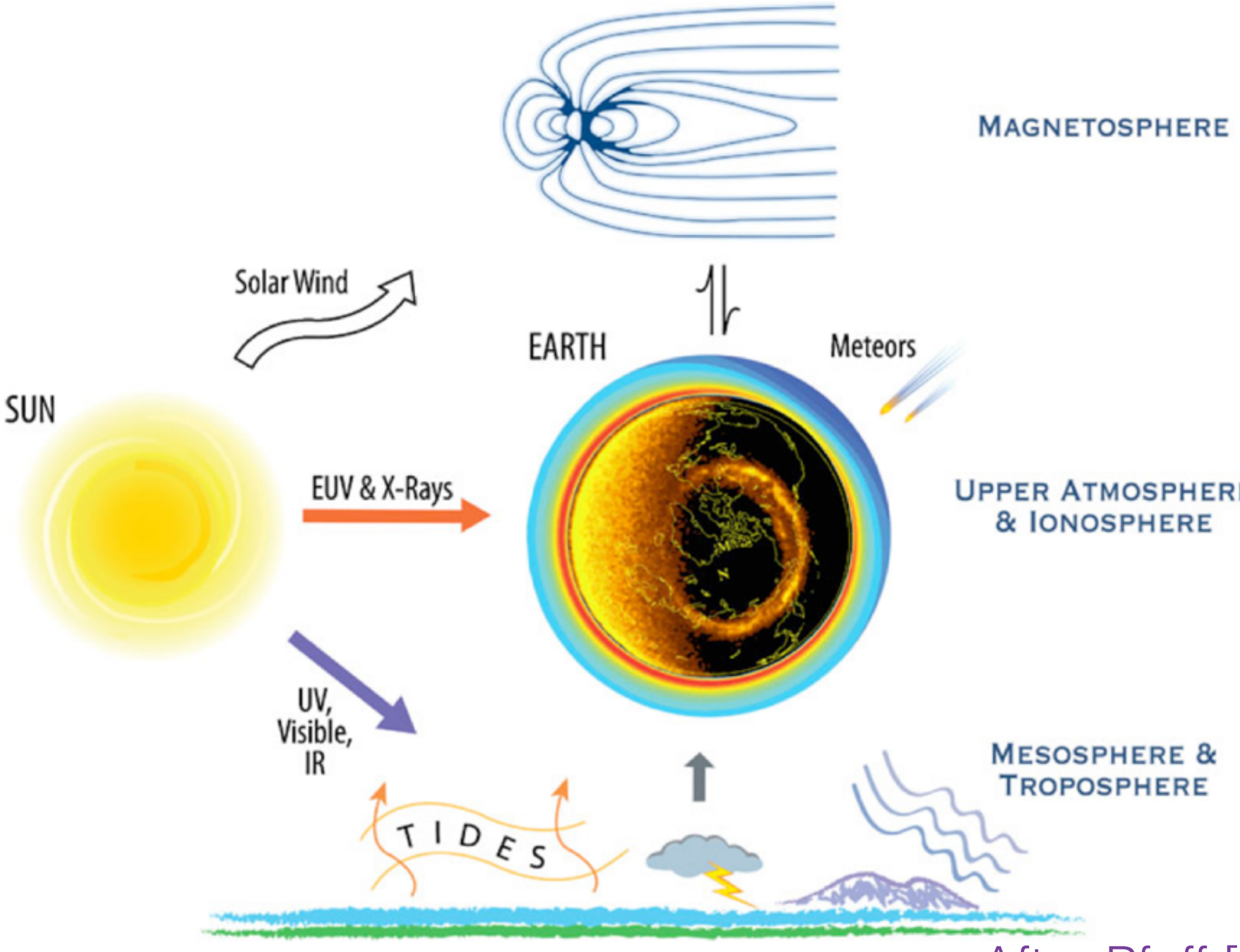

After Pfaff [2012]

Agenda

16:00	Jeff Klenzing	An overview of long term variations in geospace
16:05	Stan Solomon	Solar variability and anthropogenic change in the upper atmosphere
16:20	Art Richmond	Causes of long-term change in the upper atmosphere
16:35	John Dombeck	Solar cycle (long-term) variations of auroral particle acceleration from FAST satellite data
16:50	Angeline Burrell	Studying ionospheric solar-cycle variations with SuperDARN
17:00	Russell Stoneback	Pysat and DINEOFs, a system for system science
17:10	Chihoko Cullens	The 11-year solar cycle variations on gravity waves using WACCM and SABER
17:20	Shunrong Zhang	Multiple ISR observations of upper atmospheric long-term cooling
17:30	Jia Yue	Long-term trend of SABER carbon dioxide
17:40	Joe She	Long-term trend of midlatitude mesopause temperature trend deduced from quarter century (1990-2014) Na lidar observations
17:50		Discussion

Long-term Variations in the Geospace Environment: Questions

- How do the relative influences of coupling between the various layers affect the ionosphere over the course of the solar cycle?
- How accurately can our general understanding/application/prediction of shorter-term physics be without understanding/accounting for long-term effects?
- How do we determine (separate out) these long-term effects without averaging over many solar cycles?
- What are the limits on predictability of the SW-M-I-T system due to limitations in solar cycle detail predictability?
- How does the spectral variability of the sun influence the MIT system?
- Is the apparent differential trend of CO_2 with altitude above the mesopause real, and, if so, what could be its cause?
- By what mechanisms do geomagnetic-field changes affect the thermospheric temperature, and how do these mechanisms modulate CO_2 effects?
- How is energy transfer from M to I-T affected by I-T conditions and response, and on what scales?
- What unique properties does your data have that need to be accounted for in a general system for system science?
- How can we combine multiple instrument data to obtain long-term trend for gravity wave study?

http://cedarweb.vsp.ucar.edu/wiki/index.php/2015_Workshop:Geospace_variations

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